

<b>C1</b> 1446	SEQUENCE NO. (MDE USE ONLY)	<b>STATE OF MARYLAND</b> <b>WELL COMPLETION REPORT</b> FILL IN THIS FORM COMPLETELY PLEASE TYPE	THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.
1 2 3 4 5 6 (THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)			COUNTY NUMBER
ST/CO USE ONLY DATE Received MM DD YY	DATE WELL COMPLETED MM DD YY	Depth of Well 22 450 26 8/20/10 (TO NEAREST FOOT) O.K. BB	PERMIT NO. FROM "PERMIT TO DRILL WELL" 10-95-1891
8 13	15 20		28 29 30 31 32 33 34 35 36 37
OWNER Viking Custom Homes		TOWN ELWOOD CITY	
STREET OR RFD 9215 Wilbur Drive		SECTION LOT	
SUBDIVISION			

WELL LOG		
Not required for driven wells		
STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING		
DESCRIPTION (Use additional sheets if needed)	FEET	check if water bearing
	FROM TO	
Top soil	0 3	
Broken rock	3 85	
Soft gray rock	85 105	
Hard gray rock	105 450	
2x 450 geo bores 1st 43' PVC + 40' ST 5" 2nd 87' ST 6"		

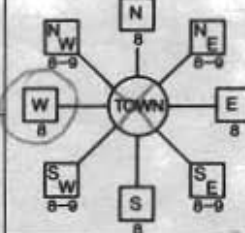
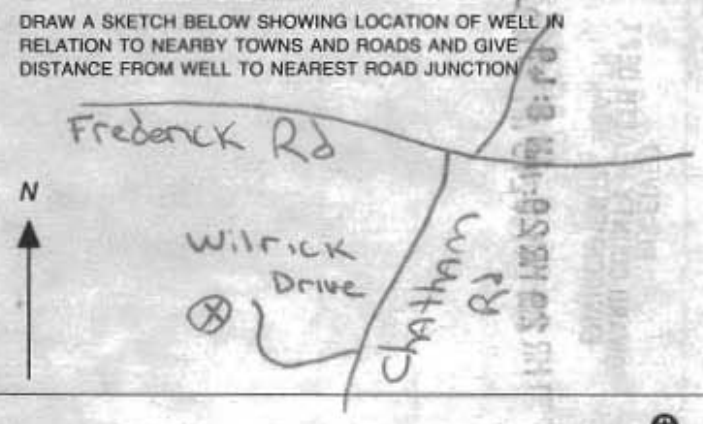
GROUTING RECORD	
WELL HAS BEEN GROUTED (Circle Appropriate Box) YES <input checked="" type="checkbox"/> Y NO <input checked="" type="checkbox"/> N	
TYPE OF GROUTING MATERIAL (Circle one) CEMENT <input checked="" type="checkbox"/> CM BENTONITE CLAY <input checked="" type="checkbox"/> BC	
NO. OF BAGS 21	NO. OF POUNDS 45-46
GALLONS OF WATER 225	
DEPTH OF GROUT SEAL (to nearest foot) from 48 TOP 52 ft. to 54 BOTTOM 56 ft. (enter 0 if from surface)	
CASING RECORD	
casing types insert appropriate code below	
<input checked="" type="checkbox"/> ST STEEL	<input checked="" type="checkbox"/> CO CONCRETE
<input checked="" type="checkbox"/> PL PLASTIC	<input checked="" type="checkbox"/> OT OTHER
MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch) 60 61 63 64 66 70
	Total depth of main casing (nearest foot)
OTHER CASING (if used) diameter inch depth (feet) from to	
EACH CASING	
screen type or open hole (insert appropriate code below)	
<input checked="" type="checkbox"/> ST STEEL	<input checked="" type="checkbox"/> BR BRASS
<input checked="" type="checkbox"/> PL PLASTIC	<input checked="" type="checkbox"/> HO OPEN HOLE
OTHER	

PUMPING TEST	
HOURS PUMPED (nearest hour)	8 9 11 15
PUMPING RATE (gal. per min.)	
METHOD USED TO MEASURE PUMPING RATE	
WATER LEVEL (distance from land surface)	
BEFORE PUMPING	17 20 ft.
WHEN PUMPING	22 25 ft.
TYPE OF PUMP USED (for test)	
<input checked="" type="checkbox"/> A air	<input checked="" type="checkbox"/> P piston
<input checked="" type="checkbox"/> C centrifugal	<input checked="" type="checkbox"/> R rotary
<input checked="" type="checkbox"/> J jet	<input checked="" type="checkbox"/> S submersible
<input checked="" type="checkbox"/> T turbine	<input checked="" type="checkbox"/> O other (describe below)

NUMBER OF UNSUCCESSFUL WELLS: 0
WELL HYDROFRACTURED YES <input checked="" type="checkbox"/> Y NO <input checked="" type="checkbox"/> N
CIRCLE APPROPRIATE LETTER A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL
I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.
DRILLERS LIC. NO. MW D 355
DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)
LIC. NO. MW D 559
SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

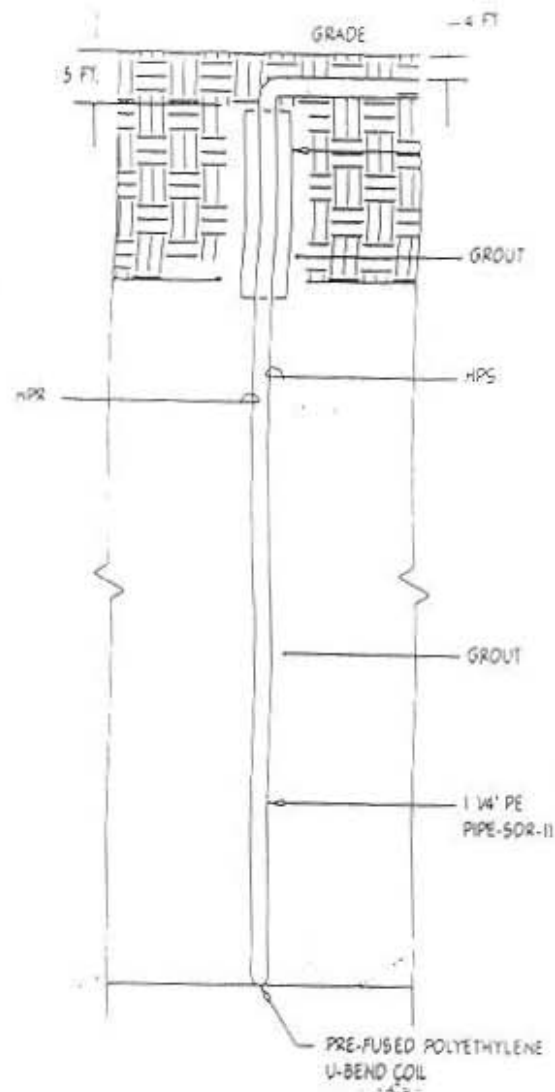
SCREEN RECORD	
DEPTH (nearest ft.)	
1 8 9 11 15 17 21	
2 23 24 26 30 32 36	
3 38 39 41 45 47 51	
SLOT SIZE 1 2 3	
DIAMETER OF SCREEN (NEAREST INCH) 58 60	
from to	
GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68	
MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q	
70 72 74 75 76	
TELESCOPE CASING	LOG INDICATOR OTHER DATA

PUMP INSTALLED	
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO)	YES NO
IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.	
TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29	
CAPACITY: GALLONS PER MINUTE (to nearest gallon)	31 35
PUMP HORSE POWER	37 41
PUMP COLUMN LENGTH (nearest ft.)	43 47
CASING HEIGHT (circle appropriate box and enter casing height)	
<input checked="" type="checkbox"/> + above	LAND SURFACE (nearest foot)
<input checked="" type="checkbox"/> - below	
LOCATION OF WELL ON LOT SHOW PERMANENT STRUCTURE SUCH AS BUILDING, SEPTIC TANKS, AND /OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCES (MEASUREMENTS TO WELL)	

B 1	<b>3173</b>	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND <b>APPLICATION FOR PERMIT TO DRILL WELL</b> 532572 please type	STATE PERMIT NUMBER <b>40-95-1891</b> <small>fill in this form completely</small>
Date Received (APA) 8 MM DD YY 13 <b>Viking Custom Homes</b>		OWNER INFORMATION 15 Last Name Owner First Name 34 <b>815 Windriver Drive</b> 36 Street or RFD 55 <b>Sykesville MD 21784</b> 57 Town 70 State 72 Zip 76		
DRILLER INFORMATION Driller's Name <b>Michael Barlow</b> MW D355 Firm Name <b>Barlow Well Drilling</b> Address <b>522 Underwood Lane 21014</b> Signature <b>3/22/10</b> Date		LOCATION OF WELL B 3 <b>Howard</b> 8 COUNTY 21 <b>The Enclave at Dunloggin</b> 23 SUBDIVISION 42 SECTION 44 46 LOT 48 50 <b>Ellcott City</b> 52 NEAREST TOWN 71 MILES FROM TOWN (enter 0 if in town) 73 <b>0</b> M 11 <b>Overlook</b>		
WELL INFORMATION B 2 APPROX. PUMPING RATE (GAL. PER MIN.) 8 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) 14 20		DIRECTION OF WELL FROM TOWN (CIRCLE BOX)  ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH WEST EAST SOUTH DISTANCE FROM ROAD 34 37 ENTER FT OR MI 38 39 TAX MAP 24 BLK 10 PARCEL 412		
USE FOR WATER (CIRCLE APPROPRIATE BOX) 22 <input type="checkbox"/> DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION <input type="checkbox"/> FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) <input type="checkbox"/> INDUSTRIAL, COMMERCIAL, DEWATERING <input type="checkbox"/> PUBLIC WATER SUPPLY WELL <input type="checkbox"/> TEST, OBSERVATION, MONITORING <input checked="" type="checkbox"/> GEO-THERMAL <b>2 x 450'</b>		NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL <b>Howard (13) Public</b> COUNTY NAME COUNTY NO. STATE SIGNATURE DATE ISSUED <b>4/21/2010</b> <b>Brian Baber</b> 4/21/2011 43 MM DD YY 48 CO SIGNATURE NORTH GRID <b>523</b> 000 EAST GRID <b>847</b> 000 50 55 57 63		
APPROXIMATE DEPTH OF WELL <b>450</b> FEET 24 28 APPROXIMATE DIAMETER OF WELL <b>6</b> INCH NEAREST INCH		SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X SOURCES OF DRILLING WATER 1. 2. 3. WRITE THE BOX NUMBER FROM THE MAP HERE E <b>847</b> N <b>523</b> 000 000		
METHOD OF DRILLING (circle one) 30 BORED (or Augered) JETTED Jetted & DRIVEN 37 AIR-ROTARY AIR-PERCUSION ROTARY (Hydraulic Rotary) CABLE REVERSE-ROTARY DRIVE-POINT other		DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO NEARBY TOWNS AND ROADS AND GIVE DISTANCE FROM WELL TO NEAREST ROAD JUNCTION 		
REPLACEMENT OR DEEPENED WELLS (CIRCLE APPROPRIATE BOX) 39 <input checked="" type="checkbox"/> THIS WELL WILL NOT REPLACE AN EXISTING WELL <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS <input type="checkbox"/> THIS WELL WILL DEEPEAN AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEANED (IF AVAILABLE) 41 52				
Not to be filled in by driller (MDE OR COUNTY USE ONLY) APPROP. PERMIT NUMBER <b>G</b> PERMIT No. <b>40-95-1891</b> 70 71 72 73 74 75 76 77 78 79				
SPECIAL CONDITIONS <small>NOTE - APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED -</small>				

4/21/2010  
Borehole  
Locations  
O.K. (BB)





4 TYPICAL BORE HOLE DETAIL  
 M1.00 NOT TO SCALE



Providing Quality Systems for Over 20 Years  
Commercial & Residential Water Well Drilling  
Test Borings & Consulting • Geothermal Drilling & Systems  
NGWA & IGSHPA Certified

March 22, 2010

Howard County Health Department  
7178 Columbia Gateway Drive  
Columbia, MD 21046  
Fax: 410-313-2648

Re: Lot 4, The Enclave at Dunloggin

Dear Department of Environment:

Please note unless otherwise specified all geothermal bores installed by our company will be installed as follows:

Grout: Bentonite Grout 20% solids minimum  
Manufacture(s): Baroid or Wyo-Ben  
Will be grouted from the bottom to the top with grout material

Piping: Polyethylene SDR 11 160 PSI as recommended per IGSHPA  
Manufacture: EnDot or Charter Plastics or equal, Size 1" or 1 1/4"  
IGSHPA Certification Number 12687

Also attached is a cross section diagram of the bore hole.

We would appreciate your help in getting this permit released as soon as possible so that we can expedite this project. If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael Barlow", is written over a light blue horizontal line.

Michael Barlow

Driveway

Lot 4  
Enclave at Dunloggin

15'

20'

15' 10'

**MICHAEL BARLOW WELL DRILLING  
522 UNDERWOOD LANE  
BEL AIR, MD 21014  
410-838-6910  
410-838-3582 FAX**

**Howard County Health Dept  
7178 Columbia Gateway Drive  
Columbia, MD 21046**

**March 22, 2010**

**The proximity of the side property line, the slope of the rear yard and the wooded area to the rear prevents us from placing the geo holes any further from the house than shown. We will be able to stay at least 10' from the side and rear property lines. Please give me a call if you have any questions.**

**Michael Isom**